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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,401	09/11/2003	Masahiro Totsu	114184	3757
25944	7590	10/19/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER LE, DANG D	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/659,401

Applicant(s)

TOTSU ET AL.

Examiner

Dang D. Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 24-29, 31, 32, 35, 37-40, 42, 43, 80-86, 88-90, 92-94, 96 and 97 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-29, 31, 32, 35, 37-40, 42, 43, 80-86, 88-90, 92-94, 96 and 97 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 24-29, 31, 32, 35, 37-40, 42, 43, 80-86, 88-90, 92-94, 96, 97 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 24-27, 29, 31, 32, 80, and 81 are rejected under 35 U.S.C. 102(b) as being anticipated by Ballantine et al. (6,105,274).

Regarding claims 24 and 80, Ballantine et al. shows a method of cooling an object comprising:

- Circulating a coolant past the object (substrate), wherein the coolant includes a first component (fluid) and a second component (entrained particles) dispersed in the first component in a state of being held by holding members, the second component changes phase (or having higher heat capacity as recited in claim 80) in order to absorb a predetermined amount of heat;

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- Setting a mixing ratio of the first component to the second component according to an amount of heat generated by the object (column 3, lines 50-65); and
- Mixing the second component with the first component according to the mixing ratio (also see column 4, line 65 to column 5, line 5).

Regarding claims 25-27, 29, 31, 32, 81, it is noted that Ballantine et al. also shows all of the limitations of the claimed invention.

4. Claims 24-29, 31, 32, 35, 37, and 80-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Colvin et al. (4,911,232).

Regarding claims 24 and 80, Colvin et al. shows a method of cooling an object comprising:

- Circulating a coolant past the object, wherein the coolant includes a first component (water, column 4, line 25-30) and a second component (water, column 4, line 39-50) dispersed in the first component in a state of being held by holding members, the second component changes phase (or having higher heat capacity as recited in claim 80) in order to absorb a predetermined amount of heat;
- Setting a mixing ratio of the first component to the second component according to an amount of heat generated by the object (column 5, lines 50-60); and
- Mixing the second component with the first component according to the mixing ratio (column 7, lines 1-20).

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Regarding claims 25-29, 31, 32, 35, 37, 81-83, it is noted that Ballantine et al. also shows all of the limitations of the claimed invention.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 38, 39, 84, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colvin et al. in view of Marshall (4,761,314).

Regarding claims 38, 39, 84, and 85, Colvin et al. shows all of the limitations of the claimed invention except for the grooves or pores.

Marshall shows the grooves or pores for the purpose of reducing heat.

Since Colvin et al. and Marshall are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include grooves or pores as taught by Marshall for the purpose discussed above.

7. Claims 40, 42, 43, 86, 88-90, 92, 93, 94, 96, 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballantine et al. in view of Hayashi (5,770,899).

Regarding claims 40, 42, 43, 86, 88, and 89, Ballantine et al. shows all of the limitations of the claimed invention except for the coil of the linear motor as part of a stage apparatus as apart of an exposure apparatus.

Hayashi shows the coil of the linear motor as part of a stage apparatus as apart of an exposure apparatus for the purpose of reducing heat.

Since Ballantine et al. and Hayashi are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to cool the coil of the linear motor as part of a stage apparatus as apart of an exposure apparatus as taught by Hayashi for the purpose discussed above.

Regarding claims 90, 92, and 93, the claims are similar to claims 89, 86, 88, and 89. As a result, they are also rejected.

Regarding claims 94, 96, and 97, the claims are similar to claims 24, 40, 42, and 43. As a result, they are also rejected.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D. Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

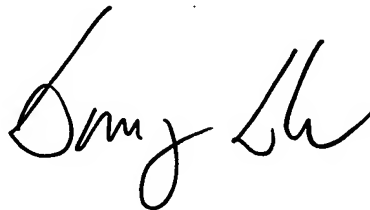
A handwritten signature in black ink, appearing to read 'Dang D. Le', is centered on the page.

**DANG LE  
PRIMARY EXAMINER**

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

10/13/05

A handwritten signature in black ink, appearing to read "Dangle", is written over the signature line.

**DANGLE**  
**PRIMARY EXAMINER**